

REMARKS

In the outstanding office action, claims 21-26 and 33-42 were presented for examination. The claims were restricted as follows: group I (claims 21-26, 34-40), group II (claims 33, 41-42). Claims 33 and 41-42 were withdrawn from consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention. Claims 21-26 were objected to because of informalities. Claims 21-26, 34-35, and 37-40 were rejected under 35 U.S.C. §102(b) in view of EP 992,659 issued to Krüger on April 12, 2000 (“Krüger”), which corresponds to United States Patent No. 6,555,070. Claims 21-26, 34, and 36 were rejected under 35 U.S.C. §103(a) over United States Patent No. 5,615,551 issued to Matsushima on Sept. 14, 1995 (“Matsushima”) in view of Krüger.

Objection to Claims

Concerning the objection to claims 21-26, un-highlighted versions of the previously amended claims are enclosed herewith. No new matter has been added. Applicants respectfully request withdrawal of the objection to the claims.

Restriction Requirement

Concerning the restriction requirement, the outstanding Office Action states that claims 33, 41, and 42 are directed to methods of making the products of claims 21, 40, and 34 respectively. Applicants respectfully traverse the restriction requirement and request reconsideration in view of the following remarks.

Two criteria must be present for a requirement for restriction to be proper: (1) the inventions must be independent or distinct as claimed; and (2) there would be a serious burden on the examiner if restriction is not required. MPEP § 803. Initially, applicants note that because claims 33, 41, and 42 are each directed to a product defined by the process by which it can be made, each claim is still a product claim. *See In re Bridgeford*, 357 F.2d 679 (CCPA 1966). “[D]efining the product in terms of a process by which it is made is nothing more than a permissible technique that applicant may use to define the invention.” MPEP § 806.05(f). Moreover, applicants note that claims 33, 41,

and 42 are written in dependent form as depending from claims 21, 40, and 34 respectively, and therefore claims 33, 41, and 42 include all the limitations of claims 21, 40, and 34 respectively in addition to adding a further limitation defining the product in terms of how it is made. “[M]ore than one species of an invention, not to exceed a reasonable number, may be specifically claimed in different claims in one national application, provided the application also includes an allowable claim generic to all the claimed species and all the claims to species in excess of one are written in dependent form or otherwise include all the limitations of the generic claim.” 37 CFR 1.141.

In the instant application, dependent claims 33, 41, and 42, as written, include all the limitations of claims 21, 40, and 34 respectively, thus the claims are clearly related. Therefore, applicants respectfully submit that because groups I and II are related as disclosed, the restriction requirement is improper. Moreover, applicants respectfully submit that searching the subject matter of groups I and II, as outlined in the outstanding Office Action, does not place a serious burden on the Examiner. Accordingly, applicants respectfully request withdrawal of the requirement for restriction with regard to groups I and II.

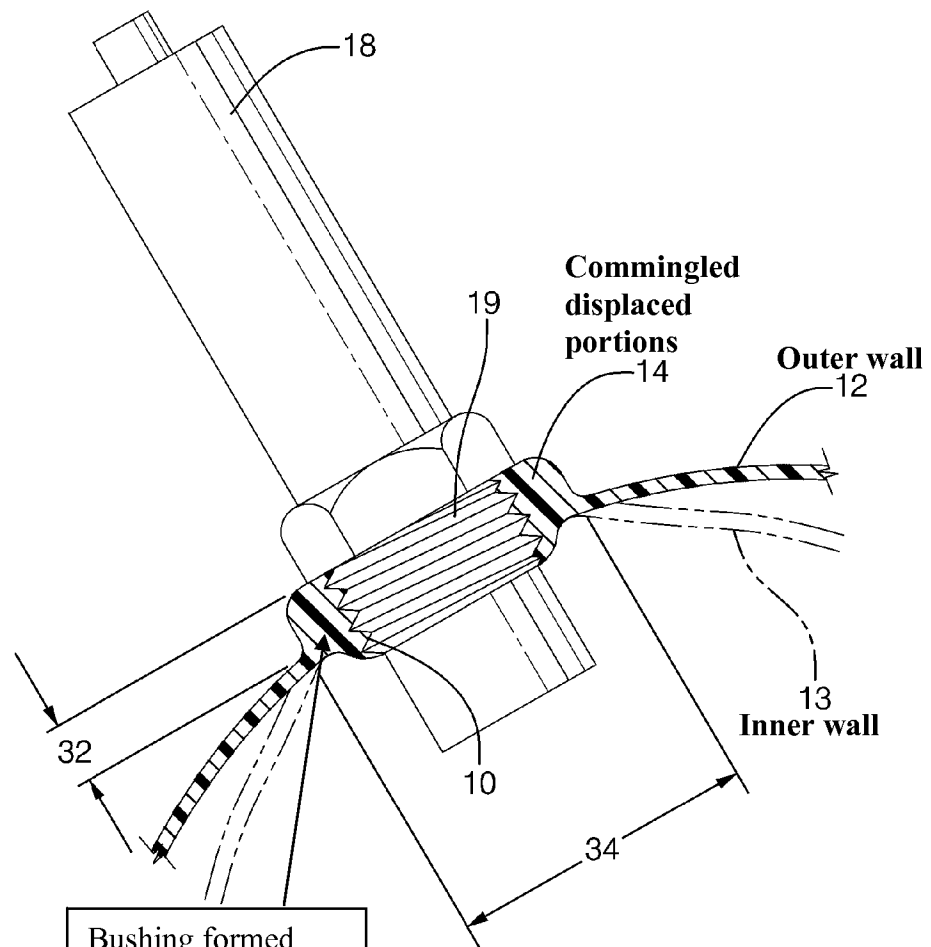
Moreover, it is submitted that issuing one patent on the subject matter of groups I and II as defined in the outstanding Office Action would be more expedient for the United States Patent and Trademark Office, the inventor, and the public. Applicants respectfully request withdrawal of the restriction requirement for this reason as well.

Section 102(b) Rejection

Claims 21-26, 34-35, and 37-40 were rejected as being anticipated by Krüger under 35 U.S.C. § 102(b). 35 U.S.C. § 102 holds that “[t]he identical invention must be shown in as complete detail as is contained in the...claim” for anticipation to be present. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). More particularly, under 35 U.S.C. § 102, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. of Cal.*, 814 F.2d 628, 631

(Fed. Cir. 1987). That is, to anticipate a claim under § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987).

Accordingly, applicants respectfully submit that the Krüger reference does not anticipate claims 21-26, 34-35, and 37-40. Concerning claim 21, Krüger fails to show a bushing “**formed in** the double wall arrangement from a displaced portion of the outer wall and a displaced portion of the inner wall, wherein the displaced portion of the inner wall and the displaced portion of the outer wall are **merged together** to define the bushing.” (Emphasis added). Concerning claim 34, Krüger fails to show a bushing “**formed by commingled displaced portions** of the inner wall and the outer wall.” (Emphasis added). In particular, reference is made to Figures 10 and 11 of the instant application, which are reproduced below and show a displaced portion of an outer wall 12 merged with a displaced portion an inner wall 13 so as to result in a commingled connection 14 between the two walls and form a bushing 10, which can is then tapped to accept a threaded connector 19 of an oxygen sensor 18.



Bushing formed from commingled inner and outer walls

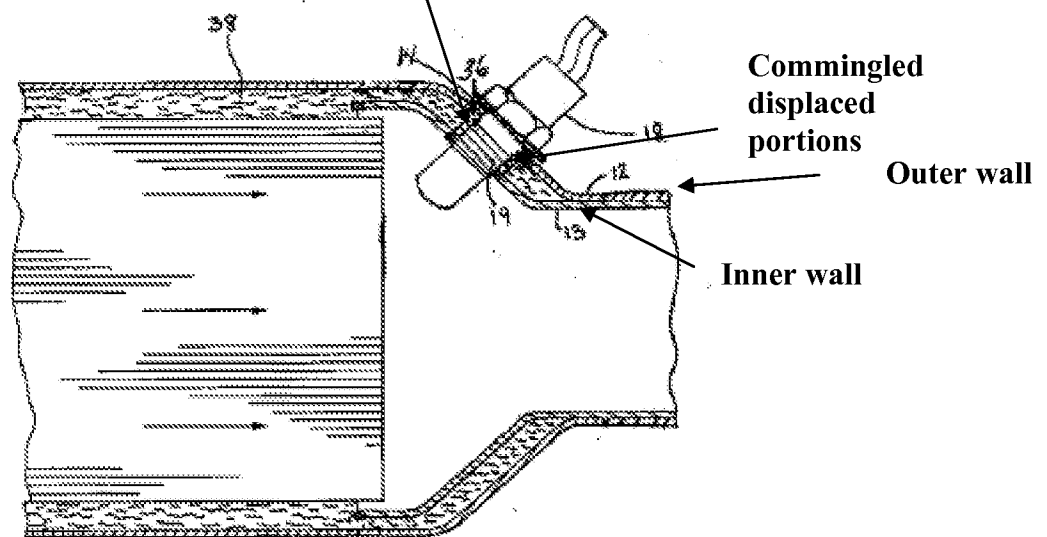
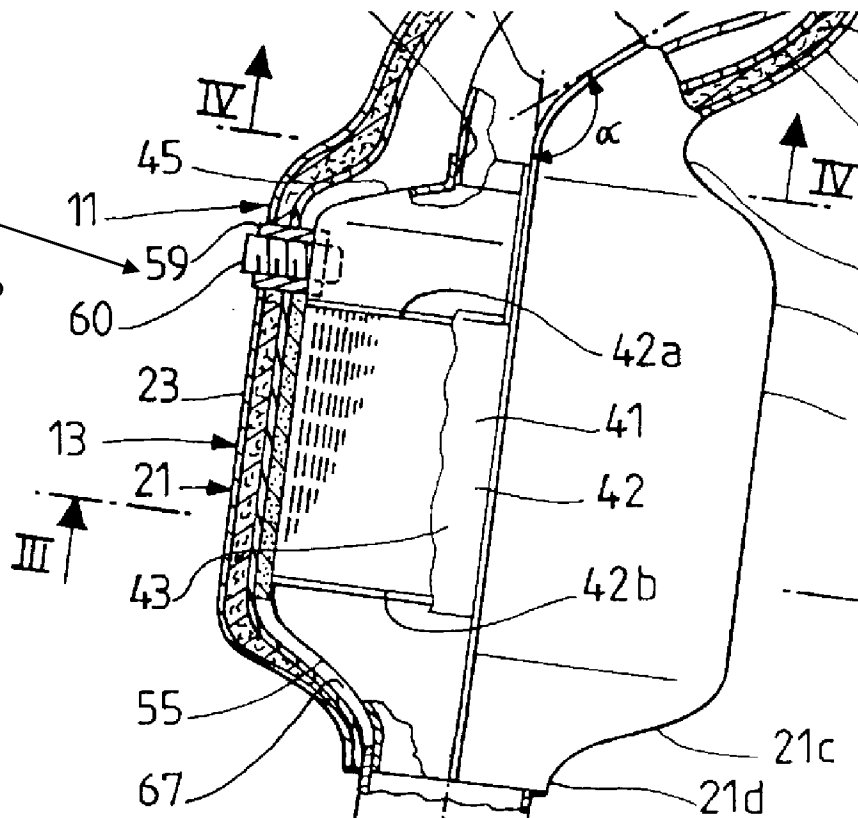


FIG. 11

Rather, as described at column 13, lines 1-5, Krüger shows “a metal bush
 259 inserted into the wall of the exhaust manifold 212 and welded tightly to a pair of
shells of this wall.” (Emphasis added). Because Krüger describes a metal bush that is
inserted into and welded to a wall, it follows that the metal bush of Krüger is connected
 as a separate component and thus cannot be a bushing “formed by commingled
displaced portions of the inner wall and the outer wall.”

An exemplary embodiment of such a forming process is provided in
 Figures 1-7 of the instant application, which illustrates a bushing being formed
 sequentially in a catalytic converter using a form drill process in which a rotated bit is
 used to soften and displace the converter wall. Furthermore, Krüger also fails to show an
 inner wall and an outer wall having displaced portions that are either merged together or
 commingled. Rather, Krüger shows each shell of the pair of shells having a separate hole
 through which the metal bush projects after being welded to the shells, as described at
 column 8, lines 63-67 and shown in Figure 2 of Krüger, partially reproduced (in pertinent
 part) below.

In Krüger, metal bush
 59 is a separate
 component that is
inserted into holes in
 the shells and welded
 to the shells.



Thus, for at least the reasons outlined above, applicants respectfully submit that because the Krüger reference does not teach each and every limitation of claim 21 or of claim 34, claims 21 and 34 are now in condition for allowance. Because claims 22-26 depend from either directly or indirectly from claim 21, and claims 35 and 37-40 depend from either directly or indirectly from claim 34, applicants respectfully submit that Krüger does not anticipate claims 22-26, 35, and 37-40 for at least the same reasons as it does not anticipate claim 21 or claim 34. Therefore, applicants respectfully submit that claims 21-26, 34-35, and 37-40 are patentable over Krüger, and request reconsideration and withdrawal of this rejection.

Section 103(a) Rejection

A proper obviousness rejection requires establishing that the prior art references, when combined, teach or suggest all of the claim limitations. MPEP § 2143. Nevertheless, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art.” *KSR Int’l Co. v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007). Rather, a “convincing line of reasoning supporting rejection” must be presented. MPEP § 2144. The analysis supporting an obviousness rejection should be made explicit, and it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements” in the manner claimed. *KSR*, slip op. at 14-15. “Often, it will be necessary...to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 14. Accordingly, applicants respectfully submit that the Matsushima reference, either alone or in combination with the Krüger reference, fails to teach or suggest all of the limitations of claims 21, 23, 25, 34, and 36.

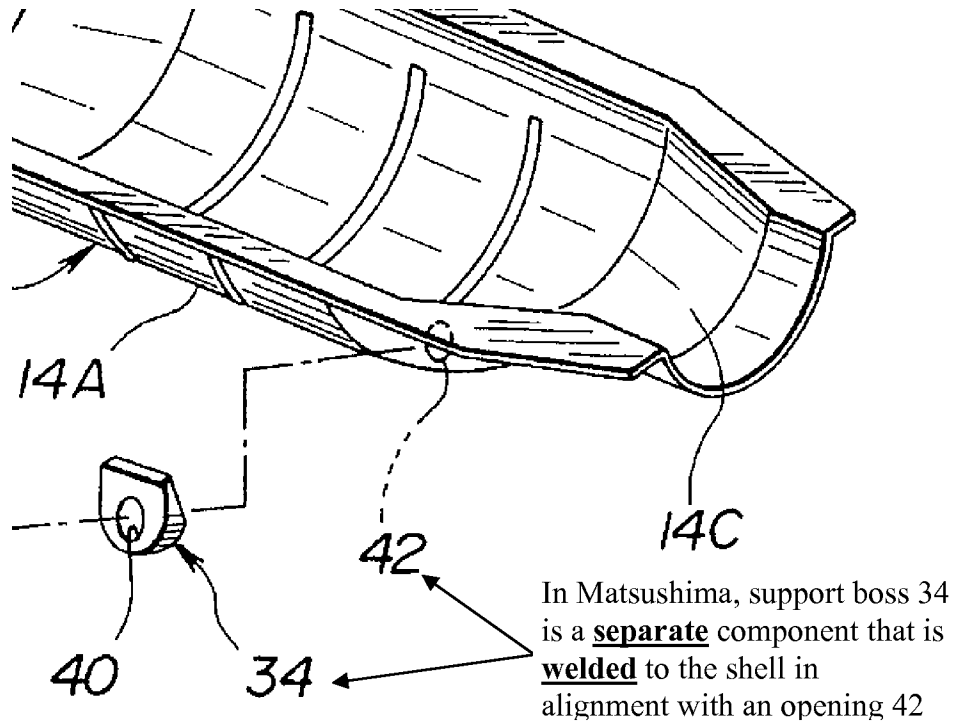
Concerning claim 21, as with the Krüger reference, the Matsushima reference fails to show a bushing “**formed in** the double wall arrangement from a displaced portion of the outer wall and a displaced portion of the inner wall, wherein the

displaced portion of the inner wall and the displaced portion of the outer wall are **merged together** to define the bushing.” (Emphasis added). Concerning claim 34, as with Krüger, Matsushima fails to show a bushing “**formed by commingled displaced portions** of the inner wall and the outer wall.” (Emphasis added).

In particular, reference is once again made to Figures 10 and 11 of the instant application, which is reproduced above and shows a displaced portion of an outer wall 12 merged with a displaced portion an inner wall 13 so as to result in a commingled connection 14 between the two walls and form a bushing 10, which is then tapped to accept a threaded connector 19 of an oxygen sensor 18.

Rather, as described at column 2, lines 49-51, Matsushima shows a “sensor support boss 34 which is made of metal and **secured** to the downstream-end portion 14C of the lower shell 14 of the tubular shell 10 by a suitable manner such as **welding**.” (Emphasis added). Because Matsushima describes a sensor support boss that is **secured** to a shell, it follows that the support boss of Matsushima is connected as a separate component and thus cannot be a bushing “**formed by commingled displaced portions** of the inner wall and the outer wall”.

An exemplary embodiment of such a forming process is provided in Figures 1-7 of the instant application, which illustrates a bushing being formed sequentially in a catalytic converter using a form drill process in which a rotated bit is used to soften and displace the converter wall. Furthermore, Matsushima also fails to show an inner wall and an outer wall having displaced portions that are either merged together or commingled. Rather, Matsushima describes sensor support boss 34 as being secured to the single shell in alignment with an opening 42 in the shell, as described at column 2, lines 55-59 and shown in Figure 1 of Matsushima, partially reproduced (in pertinent part) below.



Because Krüger also fails to show these features, without at least these features being shown in Matsushima, the references, even if combined, do not teach or suggest all of the limitations of claim 21 or of claim 34.

Thus, for at least the reasons outlined above, applicants respectfully submit that claims 21 and 34 are patentable over the Matsushima reference in view of the Krüger reference, and that claims 21 and 34 are now in condition for allowance. Where an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Because claims 22-26 depend either directly or indirectly from claim 21, and because claim 36 depends directly from claim 34, applicants respectfully submit that Matsushima, either alone or in combination with Krüger, does not render obvious claims 22-26 and 34 for at least the same reasons as it does not anticipate claim 21 or claim 34. Accordingly, applicants respectfully submit that claims 21-26, 34, and 36 are patentable over Matsushima and Krüger, and request reconsideration and withdrawal of this rejection.

CONCLUSION

For all the above reasons, applicants respectfully submit that the claims are now in proper form, and that the claims all define patentably over the prior art. Therefore, applicants submit that this application is now in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Response or otherwise, please charge them to Deposit Account No. 06-1130, maintained by the applicants' attorney.

Respectfully submitted,

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